

Medium and Long-term Plan to Develop the Broadcasting and Telecom Network

with the aim of Enhancing the Competitiveness of Broadcasting/Telecom
Services and Promoting Digital Converged Services

January 2009

Korea Communications Commission

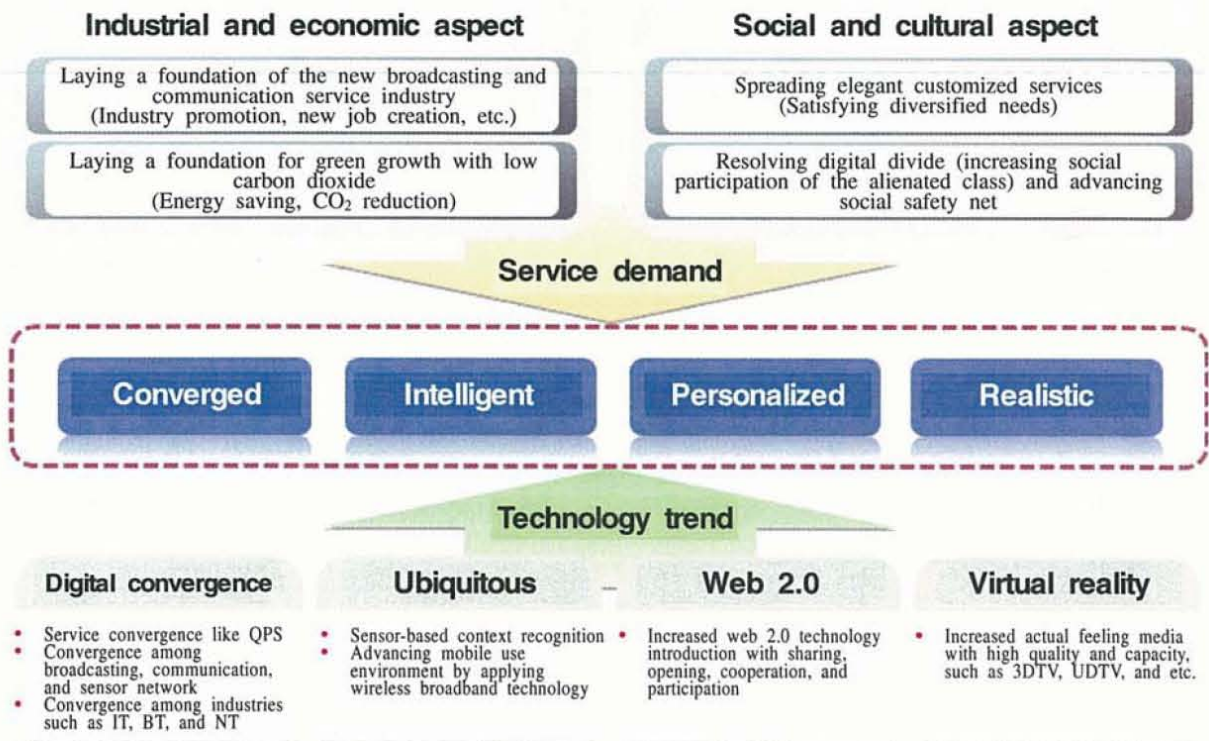
Contents

□. Future prospects for broadcasting and telecom services	1
□. Status analysis and policy implications	3
□. Vision and Objectives	6
□. Advancement of the broadcasting & telecom network	8
□. Policy tasks	14
□. Implementation strategy and funding plan	18
□. Expected effects	19

☐ **Changes in Korean society and broadcasting and telecom services**

- o **(Industrial and economic aspects)** Korea currently faces a potential reduction in economic growth, increasing unemployment, energy shortages, and environmental pollution.
 - It is possible to promote the related industries, create new jobs, and lay a foundation for green growth with low carbon dioxide emissions based on energy saving and reducing CO₂ emissions, by promoting new broadcasting and telecom services and distributing broadcasting and telecom technology throughout all industrial sectors.
- o **(Social and cultural aspect)** Korea is also faced with various social and cultural problems, including a low birth rate, ageing society, social polarization, large-scale disasters, and a diversity of cultural expectations and desires.
 - The diffusion and proliferation of customized broadcasting and telecom services could satisfy the diverse requirements of society, encourage its most alienated or marginalized members to participate in social activities, and improve the social safety net.

<Changes in Korean society and broadcasting and telecom service trend>



- Web 2.0 is an Internet environment that focuses on user participation, enabling everyone to produce and share the data conveniently on the Internet.

☐ Future broadcasting and telecom services

- o **(Converged and mobile)** Besides the voice, data, and broadcasting and telecom convergence services based on fixed line networks such as IPTV and VoIP,

- MPS¹⁾(Multiple Play Service) will be provided that combines voice call, Internet, and broadcasting in various environments such as the mobile environment.

Example QPS (Quadruple Play Service): Service that incorporates fixed line-based Internet, wire/wireless call, and IPTV Mobile TPS (Triple Play Service) : Provides the service that incorporates wireless network-based Internet, VoIP, and IPVT without interruption while moving.

- SoTV (Service over TV), which combines various applications/services such as education, healthcare, and civil services based on interactive digital TV such as IPTV and DCATV, looks likely to emerge.

- o **(Intelligent)** Context-recognition-based intelligence services capable of responding to social safety issues, disasters, and dysfunctions of the information society, and of contributing to energy saving and carbon dioxide reduction, will also appear.

□Example□Context-recognition-based public service : Intelligence service that quickly responds to social safety issues, disasters, and environmental issues based on the sensor network (IP-USN).

- o **(Personalized)** A customized service that actively provides the service - which is optimized for personal context information and desires/preferences, based on knowledge accumulated on the network - will appear.

□Example□Personalized service: The network autonomously learns personal context information and desires/preferences, and provides an optimal and customized service to individual consumers.

- o **(Realistic)** A rich media²⁾ service with ultra-high definition and multiple channels, capable of providing images that are 4~16 times clearer than the full HDTV, will appear.

Example **4DTV/3DTV** service: A broadcasting service that provides an ultra-high-definition three-dimensional picture with enhanced realism and a sense of presence.

l) MPS (Multiple Play Service): Service that adds the mobile service to TPS or QPS, which combines Internet, wire/wireless call, and broadcasting services.

2) Rich media: Media that provides rich, high-quality information such as three-dimensional pictures through the broadcasting and telecom network, and supports smooth interaction with the user.

- o **(Backbone network)** Backbone networks for the fixed line phone network, mobile communication network, and Internet network are being integrated into an All-IP-based premium network³⁾.

- ☐ Nationwide expansion of the premium network and a study on the network development direction are needed.
- ☐ The future network is in its initial stage: organization of the forum (September 2006), and an advance study driven by the academy (2007).

□ The broadband network needs to be expanded to all subscribers in Korea including farming and fishing villages, and also needs to be advanced to the Giga class.

□ The WiBro network needs to be advanced as a national network and 4G mobile communication network.

☐ Advancement is needed to promote switch-over to digital and provide a two-way service.

□ A link between the sensor network and the broadcasting and telecom network is required to enable the joint utilization of national situation information.

4) Sensor network: IP-USN-based infrastructure designed to collect, process, and distribute the information collected by the sensor, such as temperature, humidity, and air quality.

- Promoting the use of the broadcasting and telecom network

- o **(Discovering new service)** Selected 25 new services such as IPTV, high-quality video phone, and u-Work, and commercialized 14 out of them, including TV portal and interactive DCATV.
- Actively identifies future broadcasting and telecom services to meet various social and economical demands.
- o **(Compatibility)** Compatibility of wireless video phones among service providers has been secured, while compatibility verification of wireless video phones has been completed.
- o **(Quality control)** BcN service quality criteria are in place, such as a quality index and standard for fixed line phones, as well as a minimum quality standard for the Internet.
- o **(Information security)** The information security system involving "Comprehensive Internet security measures" has been prepared (July 2008).

☐ Laying the foundation for establishment of the network and promotion of its use

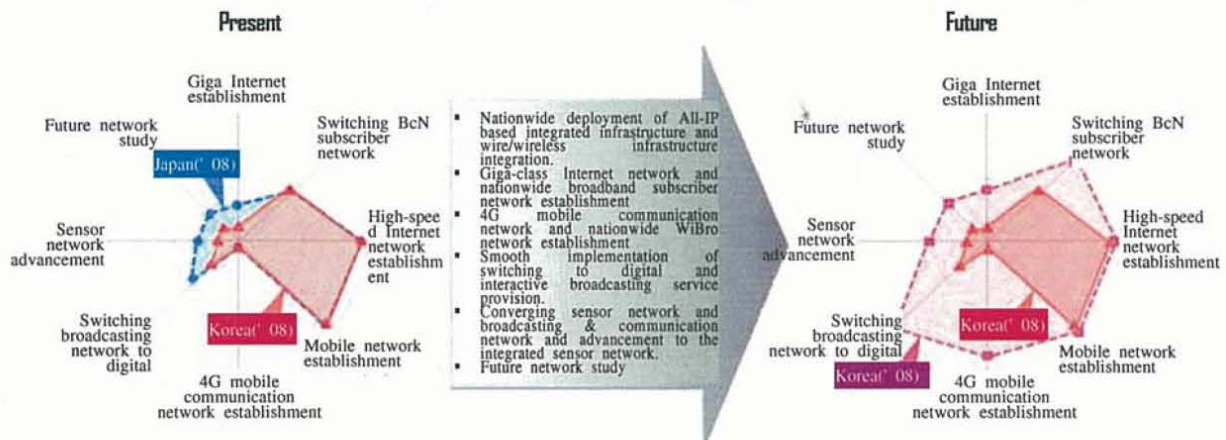
- o **(Regulation system)** A vertical regulation system has been applied that controls broadcasting services and telecom services separately based on the different legal system.
 - A horizontal regulation system is needed to make market entry easy and promote competition.
- o **(Investment encouragement)** The tax on investment was reduced only for the transmission equipment of communication service providers in 1982 in accordance with the "Temporary Investment Tax Deduction System", and loans have been available for the establishment of the public high-speed network since 1999.
 - The investment promotion policy needs to be enhanced, by reducing taxes and increasing the availability of loans.
- o **(Joint utilization)** Implementation of the joint utilization policy, including the telecommunication facility provision policy, the subscriber line joint utilization policy, and the joint facility setup policy, as well as cost-sharing of the establishment of BcN in farming and fishing villages.
 - The joint utilization system needs to be improved from the perspective of effective utilization of the national communication resources as the competitive facility infrastructure system becomes firmly established.
 - A regulation system that promotes the service while not impairing the network investment inducement of communication service providers needs to be prepared by establishing and systemizing the fundamental rule regarding network access and use.
- o **(Nurturing the related industries)** The infrastructure of the broadcasting and telecommunication service providers is at the world-class level, but the related industries are not being promoted well enough due to the small domestic market and heavy dependency on the import of core parts.
 - The support system needs to be firmly established in order to enhance the global competitiveness of the related domestic industries by securing core source technologies and securing entry into the global market.

- o Korea succeeded in building the world's top IT infrastructure by continuously executing the project to establish the high-speed information communication network and the broadband convergence network since 1995.
- Advanced the IT infrastructure and created a new market in the related areas by pursuing preemptive policies.
- As of 2007, Korea ranked first in the world the digital opportunity index (DOI) and third in the national computerization index, and surpassed the mark of 1.48 million pre-IPTV subscribers.
- o However, continuous advancement is needed as the current IT infrastructure will not be able to fully meet future demand for broadcasting and telecom services such as converged, realistic, intelligent, and personalized services.
- In particular, speed, coverage, interoperability, and quality and security leave much to be desired.
- MPS that provides service converging wire/wireless voice call, Internet, and broadcasting in various environments including the mobile environment is likely to be promoted in the future. In this case, one household will consume 125 ~ 285Mbps bandwidth on average on a fixed-line network, and one user will consume about 10Mbps on average on a wireless network.
- A rich, high-density and realistic media service that provides images that are 4 ~ 16 times clearer than a full HDTV is likely to be promoted. In this case, one household will consume an additional 100Mbps of bandwidth (based on a fixed line).
- o In addition, considering the leading trend among advanced countries such as Japan and the U.S. as well as Europe to secure technological competitiveness and market creation in the future network area, an effective response strategy is required to meet this trend.
- Preparation for the future network market can only be achieved by securing core source technologies and entering into overseas markets.

<Status of future network implementation in the U.S., Europe, and Japan >

Item	GENI (U.S.) Global Environment for Network Innovations	FIRE (Europe) Future Internet Research and Experimentation	NeW Generation Network (Japan)
Features	Concentrated study on alternative IP technology and combined technology like security and sensors	Concentrated study on wireless communication and context-recognition technology	Concentrated study on alternative IP technology, and wireless/optical communication technology
Period/Budget	2004 - 2013/400 million dollars	2007 - 2013/40 million Euros	2008 - 2015/30 billion yen
The ultra-broadband direction of the of global competition. convergence infrastructure needs to be established in order to cope with the development broadcasting and telecom network after BcN, future service requirements, and the intensification			

<Present and future establishment direction of the broadcasting and telecommunication network and its prospects>



1

Vision

The World's Leading Nation in Broadcasting-Telecom Infrastructure

Goals

Building Ultra-Broadband Convergence Networks (UBcN)
to Enable World-class Converged Broadcasting-Telecom Services

Objectives

			2009-2010	2011-2013
Backbone networks	All-IP evolution of fixed telephone networks		30%	70% (100% by 2015)
	All-IP evolution of mobile telephone networks		-	15%
Local loops	Fixed	Broadband (50M-100Mbps)	12 million	14.50 million
		Ultra-broadband (up to 1Gbps)	-	Commercial service (by 2012), 200,000 lines (by 2013)
	Wireless	Broadband (1Mbps-2Mbps)	28 million	46 million
		Ultra-broadband (10Mbps in average)	-	Commercial service & 300,000 lines (by 2013)
Broadcasting networks	Digital terrestrial broadcasting coverage		93%	96%
	Home pass rate of the digital cable TV network		93%	96%
Sensor networks	Network upgrade		Linking with public institutions' sensor networks (by 2012)	

Implementation strategy

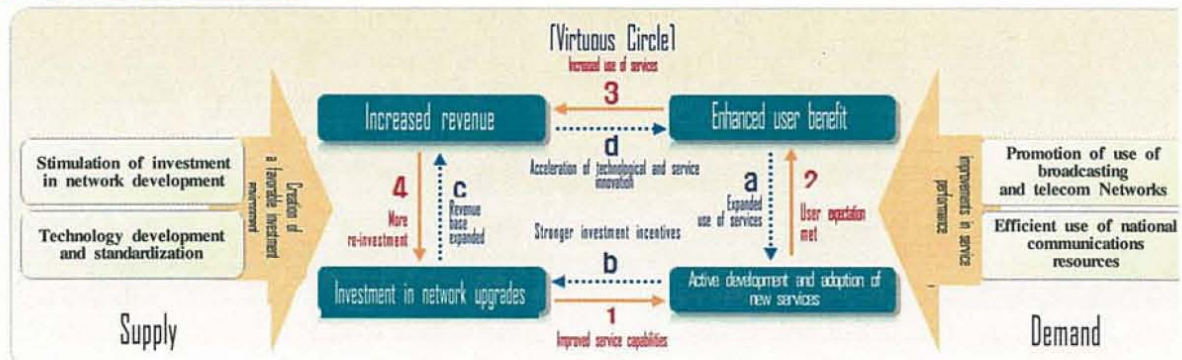
Creates virtuous cycle synergy - establishment by the private sector and support by the government.	Global leadership in the broadcasting and telecom network	"Prior" leading application and "post" spreading to the private sector	Developmental succession of the BcN project
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Global leadership in the
broadcasting and telecom network

"Prior" leading application and "post" spreading to the private sector

Developmental succession of the BcN project

Policy Tasks



Network advancement direction

The diagram illustrates the evolution of three types of networks over time, categorized by infrastructure type and year.

Timeline and Infrastructure Eras:

- 1998 - 2006:** One-way high-speed infrastructure
- 2006 - 2012:** Two-way broadband infrastructure
- 2012 - 2015:** Two-way ultra broadband infrastructure

Communication network:

- Fixed line subscriber network:** XDSL/Cable (Expands coverage) → FTTH (Expands coverage) → High-speed network (Nationwide) → FTTH (National coverage: 67%) → FTTH (National coverage: 70%) → FTTH (National coverage: 80%) → Broadband network (Nationwide)
- Wireless subscriber network:**
 - Path 1: COMA2000 → Changes to broadband → ix EYDD Rev A (Nationwide) → HSPA (Nationwide) → HSPA + (Average 7M) → Changes to ultra broadband → 3.9G/4G (Nationwide)
 - Path 2: Changes to broadband WCDMA → HSDPA (Average 1M nationwide) → WiBro Wave I (Average 7M) → WiBro Wave I (Small Metropolitan area) → WiBro Wave II → Changes to ultra broadband
- Sensor network:** Public institutions' separate sensor network → Integrated sensor network

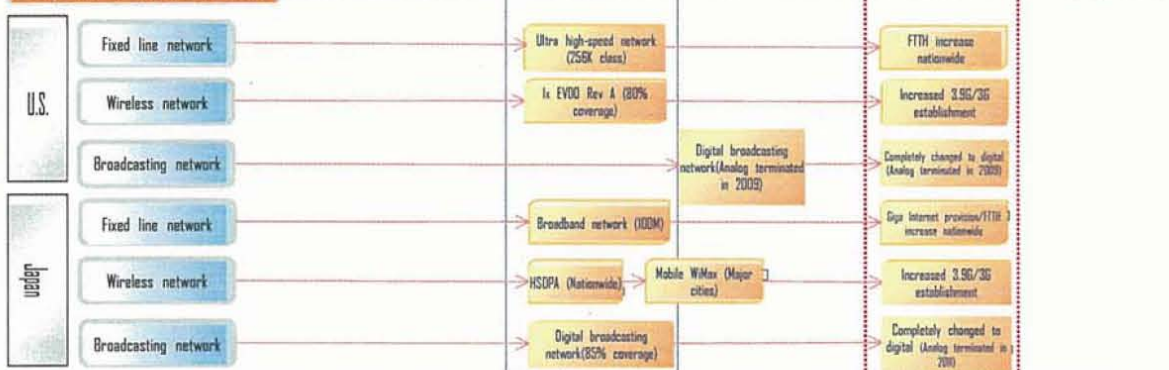
Broadcasting network:

- Terrestrial:** Terrestrial broadcasting (Non-wave MFN) → Digital terrestrial (87% coverage) → Digital terrestrial (93% coverage) → Digital terrestrial (98% coverage) → DTH/SFN
- Satellite/DMB:** Interactive broadcasting
- Cable:** Cable broadcasting (Analog) → Interactive broadcasting → Digital cable (90% coverage) → Digital cable (93% coverage) → Digital cable (95% coverage)

Backbone network:

- Fixed line phone backbone network:** Fixed line based All-IP convergence network (voice and data) → Fixed line based All-IP convergence network (Voice + data broadcasting) → Fixed line toll call (All changed to IP)
- Data backbone network:** Fixed line based All-IP convergence network (voice and data) → Fixed line based All-IP convergence network (Voice + data broadcasting) → Fixed line toll call (All changed to IP)
- Wireless phone backbone network:** Wire/Wireless All-IP convergence network (WiBro, femtocell) → Wire/Wireless All-IP convergence network (70% of fixed line phones changed to IP, 15% of wireless phones changed to IP) → All fixed lines for local calls are changed to IP
- Future network:** Future network test bed → Future network establishment (2015 -)

Comparison with overseas cases



- Broadband terrestrial broadcasting network: Switches over from the current 20Mbps (6MHz)/channel to the 100Mbps/channel so that UDTV/3DTV can be supported.
- 3.9/4G: Provides 1Gbps while stationary and 100Mbps while on the move, by applying such technologies as LTE, LTE-Advanced, and WiBro Evolution.

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Network	Phase 1 (2009 - 2010)	Phase 2 (2011 - 2013)
Toll call network	100% switchover to IP	-
Local call network	30% switchover to IP	70% switchover to IP(100% in 2015)

Network	Phase 1 (2009 - 2010)	Phase 2 (2011 - 2013)
Mobile phone network	-	15% switchover to IP

6) IMS (IP Multimedia Subsystem): Wire/Wireless standard service control platform that can provide multimedia services based on the IP, such as voice, video, and data.

Fixed-line subscriber network

- o The BcN subscription target area will be extended continuously by expanding BcN coverage to farming and fishing villages, and switches the existing xDSL method to FTTH.
 - xDSL will be developed to FTTH for single-family houses and LAN for apartments.
 - HFC will be developed by increasing the optical cable sector and reducing the number of subscribers to be accommodated by each cell.

□ Average no. of subscribers per cell: Under 200 in 2010, and under 100 in 2013.
- o The commercial Giga Internet service will be provided from 2012 by establishing the ultra-broadband subscriber network (Giga) - mainly for the metropolitan area.

< Advancement goal of the fixed-line subscriber network by phase>

Network Type		Phase 1 (2009- 2010)			Phase 2 (2011 - 2013)	
		2009	2010	2011	2012	2013
Broadband (50-100M)	Deployment ratio	Over 65%	Over 70%	Over 80%	Over 90%	Over 95%
	Subscriber	11 million	12 million	13 million	14 million	14.5 million
Ultra-broadband (Over 100M)	Subscriber	-	-	-	Commercial service, 10 thousand	0.2 million

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Wireless subscriber network

- o WiBro network coverage will be expanded to 84 cities in 2009, and the average speed of mobile communication networks such as HSPA will be increased from 1Mbps to 2Mbps by introducing HSPA⁺ technology.
- o In 2013, a total of 300,000 subscribers will be accommodated by establishing a nationwide network to provide an average 10M-level 3.9G/4.G commercial service.
- o Femtocell⁷⁾ technology will be applied to expand WiBro coverage and provide the HSDPA broadband service.

7) Femtocell: This composite word combines "femto", which means out 1,000 trillion, with "cell", which means the service sector unit managed by one station. A femtocell is a station that accommodates a far smaller area than the service diameter of existing mobile communication services.

< Advancement goal of the wireless subscriber network by phase>

Network type		Phase 1		Phase 2 (2011 – 2013)		
		2009	2010	2011	2012	2013
Broadband (Average 1M ~ 2M)	Subscribers (2M)	22 million (0.3 million)	28 million (0.8 million)	32 million (5 million)	40 million (12 million)	46 million (18 million)
Ultra broadband (Average 10M)	Establishment	-	-	-	Nationwide network	-
	Subscribers	-	-	-	-	Commercial service, 0.3 million

Broadcasting network

- o Terrestrial broadcasting will introduce the interactive service by 2010, and expand digital broadcasting coverage to 96% by 2013.
- DFN⁸⁾ The DFN has high efficiency of frequency use. technology will be applied, the broadband digital microwave network will be established, and small and medium relays will be increased.
- o Terrestrial DMB will introduce the interactive service by 2010, and the AT-DMB⁹⁾ (Advanced T-DMB) commercial service by 2012.
- o The coverage of digital cable TV will be expanded to 96% by 2013.
- o Digital radio broadcasting services will conduct a digital radio comparison experiment by 2010, and select the standard digital radio method and provide test broadcasting by 2012.

< Advancement goal of the broadcasting network by phase>

Type	Phase 1 (2009 – 2010)		Phase 2 (2011 – 2013)		
	2009	2010	2011	2012	2013
Digital terrestrial broadcasting coverage (87% in 2008)	89%	93%	94%	96%	96%
Terrestrial broadcasting/DMB	Interactive infrastructure establishment			-	
Next-generation terrestrial DMB	AT-DMB test broadcasting			AT-DMB model and commercial broadcasting	
Digital cable TV home pass ratio (90% in 2008)	91%	93%	94%	95%	96%
Digital radio broadcasting	Digital radio experiment broadcasting		-	Digital radio experiment broadcasting	-

- Digital terrestrial broadcasting coverage is based on the estimated coverage when the broadcasting network is expanded, excluding shadow areas such as skyscrapers.

- 8) DFN (Distributed Frequency Network): The method that combines the strengths of the MFN (Multiple Frequency Network), which allocates different frequencies to each relay, and the SFN (Single Frequency Network). The DFN has high efficiency of frequency use.
- 9) AT-DMB: DMB that can transmit three-dimensional pictures by increasing channel capacity up to 2 times, and can be received by the home TV receiver.

- o The sensor networks that have been independently established and operated by public agencies and others will be linked and converged with the All-IP based broadcasting and telecom network.
- A test bed that combines the broadcasting and telecom network and sensor network will be built at 8 hubs (including Seoul, Suwon, Daejeon, Daegu, Busan, and Gwangju) by 2010.
- The interface specifications of the public area sensor network - such as weather, environment, disaster prevention, safety, and facility management - will be prepared by 2012, and establishes connection.

< Advancement goal of the sensor network by phase>

Type	Phase 1 (2009 - 2010)	Phase 2 (2011 -2013)
Sensor network establishment	Establish the national IP-USN test hubs (8)	Sensor network link for the public sector (2012)

6

Network investment plan (draft) of the broadcasting
and telecom service providers

- o The broadcasting and telecom service providers are expected to invest 32 trillion, 800 billion won from 2009 to 2013.

< Network investment plan (draft) of the broadcasting and telecom service providers>

Network type		Phase 1 (2009-2010)	Phase2 (2011-2013)	Sum
Backbone network		38,953	60,843	99,796
Service control		17,605	27,209	44,814
Service network	Wire	34,832	53,043	87,875
	Wireless	34,705	56,313	91,018
Broadcasting network		2,084	2,785	4,869
Sum (Unit: 100 million won)		128,179	200,193	328,372

- The investment in phase is based on the 2007 and 2008 data submitted by the broadcasting and telecom service providers.
- However, if no data is available for the corresponding year, the criteria for 2008 or a 3-year average were applied for estimation where necessary.
- "Broadcasting network" includes total investments of the broadcasting service providers only. The investment of the cable service providers is included in the backbone/core network and the subscriber network.

New broadcasting and telecom service

□ Interactive TV-based service (SoTV), mobile IPTV, and MPS will be provided in 2012 for the first time in the world through the two-way information ultra-highway.

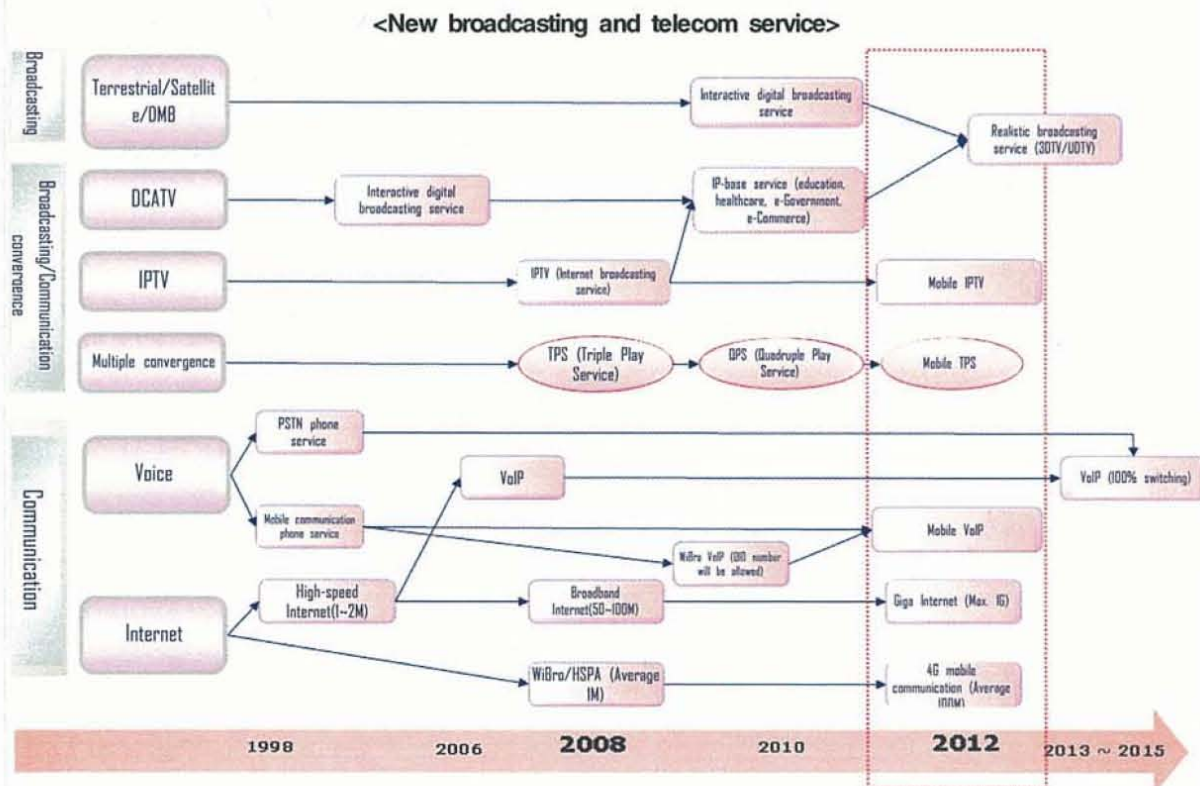
o Various additional services will be provided such as a video phone with a more moderate usage fee, as the broadcasting and telecom network is integrated with All-IP and existing regular phones are switched over to VoIP.

- Various interactive services will be provided to house hold sthrough the TV, such as education, healthcare, e-Government, and e-Commerce, besides broadcasting and phone services.

- MPS that combines the Internet, phone, and IPTV to the mobile integrated terminal for the outside will be provided

- o Provides the realistic service 10 times faster (wire 1Giga, wireless 10M) than the existing broadband network (wire 100M, wireless 1M), as broadcasting and telecom evolves to ultra-broadband.

- Realistic contents can be viewed at home that provide I-Max (Image Maximum) movies taken from various angles with images 4 -16 times clearer than full HDTV.



□ Major services

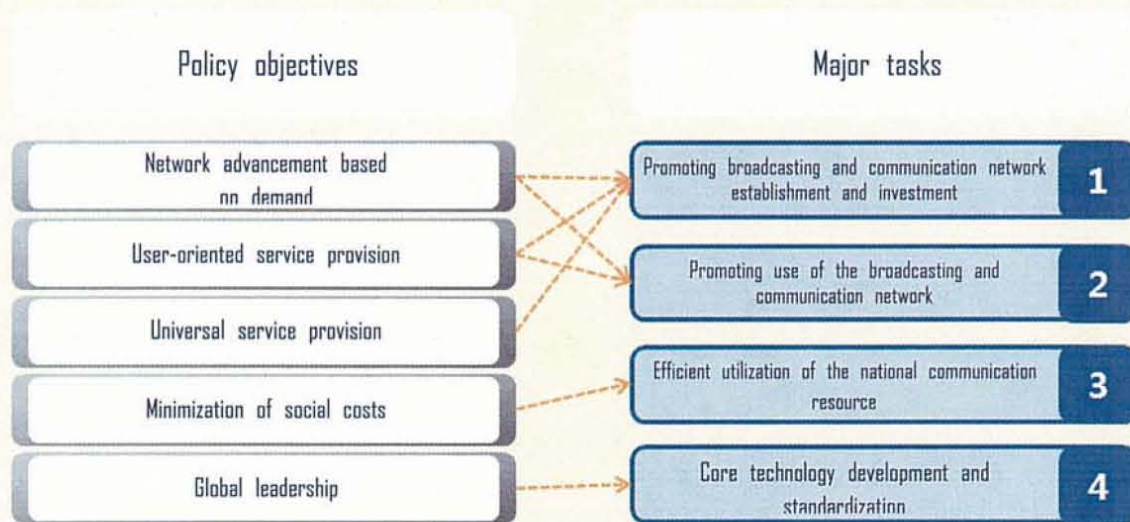
- **UDTV:** The realistic broadcasting service provides images that are 4 - 16 times clearer than full HDTV
- The broadcasting service that offers realistic moving picture contents as if the viewer at home were in a movie theatre. It doubles the realism and sense of presence by providing multiple viewpoint images from various angles with movie or better video resolution.
- **Mobile IPTV: IP-based mobile Internet broadcasting service**
- The broadcasting and telecom convergence service that offers various IP services of optimal quality at any time and place through the mobile terminal.
- **Mobile TPS:** The service that combines IP-based mobile phone, broadcasting, and Internet
- MPS (VoIP, IPTV, and Internet converged service) will offer "10 times the speed available now" without interruption while moving, regardless of the location be it at home, at the office or in the street through the integrated terminal.
- **SoTV:** Application service of interactive digital broadcasting such as TV-based education, healthcare, civil service, and e-Commerce
- **(TV-based education)** The service that broadcasts lectures from schools or educational institutes in real time, and allows the service user to ask a question on the spot and place a text purchase order at the same time.
- **(TV-based healthcare)** The service that sends the results of patient examinations (i.e. blood sugar, blood pressure, pulse, electrocardiogram) from the TV at home to the hospital, so that the patient can consult with a doctor, receive treatment, and place a pharmacy purchase order on the spot.
- **(Mobile VoIP): IP-based mobile VoIP**
- The communication service that enables the user to make a VoIP call of optimal quality while on the move. Mobile VoIP will be provided from 2009 through WiBro assigned with an identification number.

□ Policy tasks

- A policy should be implemented that creates a foundation and investment environment to promote the advancement of the broadcasting and telecom service provider's network.

- Four major policy areas: □ Establishment/Investment promotion □ Promotion of network usage □ Efficient utilization of national communication resources; and □ Development and standardization of core technology.

<Objectives and major tasks of the broadcasting and telecom network advancement policy>



<Major tasks of the broadcasting and telecom network advancement policy>

Large category	Small category
□ Establishment/Investment promotion	Develops a new service model.
	Expands the broadcasting and telecom network in vulnerable areas like fishing and farming villages.
	Improves the investment promotion policy.
	Prepares a broadcasting and telecom network information map.
□ Network usage promotion	Improves interoperability and mobility.
	Strengthens quality management and the security system.
□ Efficient utilization of national communication resources	Supports increased network utilization in a public sector
	Prepares improvement of the joint establishment and utilization system.
□ Development and standardization of core technologies	Develops core source technologies.
	Supports test verification and standardization.



Promoting the establishment of and investment in the broadcasting and telecom network

□ Develops a new service model.

- o Promotes establishment of the broadcasting and telecom network by developing new service models such as killer services and performing leading model projects.
- o Develops UBcN service models such as 3DTV/UDTV, mobile TPS, and the u-City service.

□ Expands the broadcasting and telecom network in vulnerable areas such as fishing and farming villages.

- o Supports establishment of the service provider network in areas where investment is lacking such as farming and fishing villages, schools, and libraries, in order to expand the universal user base.
- o Imposes on broadcasting and telecom service providers and government/private joint investors the obligation to set up the network in fishing and farming villages.
- o Expands the broadcasting and telecom network to schools and libraries through government support.
- o Improves the universal service system to expand the broadcasting and telecom network.

□ Improves the investment promotion policy.

- o Implements legal and policy improvements such as increased tax system/loan support and deregulation in broadcasting, telecom, convergence, and radio areas.
- o Promotes new service providers and service entry and activation by improving the broadcasting and telecom service and the service provider classification system.
- o Improves the radio usage system, including the acquisition and arrangement of radio resources.
- o Increases tax system and loan support to facilitate investment in the network by service providers.

□ Draws up a map of broadcasting and telecom network information.

- o Induces efficient establishment of the network and investment promotion by collecting and analyzing information on the nationwide broadcasting and telecom network.
- o Prepares the map on broadcasting and telecom network information to enable comprehensive identification of the national network's status.
- o Develops and distributes the indices concerning the utilization of the broadcasting and telecom network.

□ Improves interoperability and mobility.

- o Establishes a communication environment that provides uninterrupted use of various broadcasting and telecom services, regardless of the user's location and terminal.
- o Increases compatibility by preparing, testing, and verifying the technical specification so new broadcasting and telecom services.
- o Increases mobility between the wired and wireless networks by preparing, testing, and verifying the technical specifications for mobility control.

□ Strengthens quality management and the security system.

- o Improves information security by improving quality management (e.g., preparation of the quality index/criteria of future broadcasting and telecom services) and provides the information security guidelines.
- o Prepares the quality criteria and the quality measurement system for new services.
- o Sets up the quality management system for future broadcasting and telecom services.
- o Sets up the information security management system, such as the information security guidelines and preparation of the method of applying protection measures by stage.
- o Improves the information security system by securing the safety and reliability of new services, and by privacy protection certification.

□ Supports increased network utilization in a public sector

- o Diffuses and proliferates application services based on broadcasting and telecom convergence for public area informatization and improvements in the quality of the civil service.
- o Provides public services such as IPTV or DCATV-based education, healthcare, and civil services.
- o Diffuses and proliferates integrated communication services for small- and medium -sized businesses.
- o Forms the use environment that leads service for farming and fishing villages, such as IPTV and video phone.
- o Diffuses and proliferates the infrastructure for public agencies that supports sensor-based green IT.

Efficient utilization of the national communication resources

□ Prepares improvement of the joint establishment and utilization system.

- o Prepares the method of improving joint establishment and the utilization system of the current and new network for efficient utilization of the national communication resources.
- o Prepares the method of promoting the current joint establishment system like improvement of the service provider's participation procedure.
- o Improves the current joint utilization policy like re-adjustment of the scope of the utilizing service provider.
- o Prepares the joint establishment of and the utilization method for the IP-USN and building network.

Development and standardization of core technologies

□ Development of core source technologies.

- o Secures core technologies related with the future broadcasting and telecom network, in order to enhance the global competitiveness of the broadcasting and telecom industry.
- o Researches and develops source technologies including the implementation of future network technologies and services.
- o Develops core technologies for the integrated infrastructure such as integrated control, backbone network, and subscriber network technology.
- o Develops core mobile technologies such as 4G mobile communication.
- o Develops core realistic/personalized interactive broadcasting technologies such as realistic media technology.

□ Supports test verification and standardization.

- o Test verification of new technologies and services via the advancement of the broadband research and development network and the establishment of the open field test-bed environment.
- o Forms a test bed hub for the global UBcN (Ultra Broadband convergence Network)
- o Model service of the terrestrial DTV distributed frequency network to test and verify the DFN.
- o Development and standardization that fits the future communication environment, and increased international cooperation.
- o Standard development and diffusion in line with network convergence and links to provide new services.
- o Surveys and analyzes the status and trends related with the broadcasting and telecom network, and conducts international standardization activities.
- o Prepares the strategic global entry support system in core markets to secure industrial competitiveness.

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- Organizes and runs the "Advancement of the broadcasting & telecom network steering committee" for smooth communication between the government and the private sector with regard to the establishment and use of the broadcasting and telecom network.

2

- <Advancement of the broadcasting & telecom network funding plan (draft) of the private sector and government>
(Unit: 100 million won)

□ Investment by phase is based on the data submitted in 2007 and 2008 by the broadcasting and telecom service providers.

- [illegible]

Expected effects

Industry and economy

- Increases the ripple effect on the national economy
 - Investment in the broadcasting and telecom network promotes the required equipment industry as well as the productivity, level of employment, and added-value of the related industries.

Production inducement: 48.5 trillion won added-value inducement amount: 17.7 trillion won employment inducement: 126,000 persons

<Ripple effect of establishment of the broadcasting and telecom network>

Type	Govt. investment	Private investment inducement	Inducement coefficient	Inducement effect
Amount of production inducement related with the broadcasting and telecom network (trillion won)			1.422	48.5 trillion won
Amount of added-value inducement related with the broadcasting and telecom network (trillion won)	1.3	32.8	0.520	17.7 trillion won
Employment inducement related with the broadcasting and telecom network (10 thousand persons)			3.7 (person/1 billion)	12.6 trillion won

- Creates a new broadcasting and telecom industry based on core technologies and improves global competitiveness
 - Enhances technical competitiveness by securing core technologies for the future network, and lays a foundation for the development of other industries by establishing the world's best broadcasting and telecom infrastructure.
- Contributes to environmental and energy problems using the green broadcasting and telecom solution
 - Green office (u-Work) promotion will reduce energy consumption, create a new green industry, and contribute to low carbon dioxide green growth through the resolution of environmental problems.
- Society and culture
 - Popularizes the digital life by providing elegant personalized and customized broadcasting and telecom services.
 - The advanced broadcasting and telecom network will meet the diverse requirements of the public by providing various ultra-broadband, high-quality, and convergence services such as MPS and SoTV.
 - Realizes a harmonious society in which people feel happy by resolving the problems of alienation and polarization, preventing disasters, and improving response capability, as application services that are based on a convenient and safe broadcasting and telecom network are diffused and expanded.